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ABSTRACT

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The Self-concept of Siblings Of Handicapped Children - An Exploratory Study

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ABSTRACT

This study compares the self-concept of siblings of handicapped children with norms and examined mediators for this personality variable. Thirty-four siblings of handicapped children from the U. S. and Canada completed a children's self-concept scale while their parents filled out two questionnaires: one on parental attitudes and stress regarding the presence of the handicapped child and the other, the family's social support. The results showed the siblings displaying as high a self-concept as norms. The sex of the handicapped child emerged as a predictor for the self-concept of their siblings. A handicapped brother had more negative impact on a sibling, male or female. Parental attitudes and stress due to parent and child problems in caring for the handicapped child were related to the siblings' self-concept regarding their personal happiness and satisfaction. Parental pessimism showed the same trend. Support from parents' own parents and relatives assuaged anxiety in the siblings but excessive support tended to lower their self-confidence in their physical appearance and academic competence. The results are discussed as tentative with implications for future research and applied settings.

The Self-concept of Siblings Of Handicapped Children--An Exploratory Study

INTRODUCTION

A handicapped child represents a social event. It is an event that has ramifications not only for the child himself but for his family (Grossman, 1972; McMichael, 1971). The significance of a handicapped child for his family is strengthened by the systems perspective which views the family as a system with closely related subsystems. The behavior of each subsystem affects other subsystems in a transactional manner. Parents, siblings and other close relatives form the subsystems. According to this perspective, a handicapped child will have an impact on his family subsystems and his family will likewise influence his development. Among the family subsystems that will affect and be affected by a handicapped child are his siblings.

Siblings form a very special relationship, a relationship that is both reciprocal and complementary (Dunn, 1983). Sibling reciprocity exists in the play and interaction with each other. The complementary relationship is to be found in sibling caretaking, teaching and the development of attachment (Powell & Ogle, 1985). These relationships dictate that siblings would exert great influence on each other to affect each other's development. The reciprocal and complementary relationship between siblings, however, would be altered when one sibling is handicapped. Intuition would predict the change to be

negative.

The effects of a handicapped child on his siblings have concerned researchers and parents in recent years. Research has primarily focused on the emotional and behavioral adjustment. Studies have pursued a linear and pathological model assuming a negative and linear relationship to be the pattern of interaction between the handicapped child and his siblings. Conflicting results, however, have been produced. Some results confirm the pathological assumption. Adverse effects on the siblings reported include psychological difficulty (Kaplan, 1969), shame (Schonell & Watts, 1957), role tension (Farber, 1959; Fowle, 1969), health problems (Binger, Ablin, Ferguerstein, Kushner, Zoger, Mikkelson, 1969) and guilt (San Martina & Newman, 1974). Siblings of handicapped children were reported to suffer more maladjustment (Tew & Laurence, 1974) and more school problems (Gath, 1972) and were more aggressive (Breslau, 1982; Breslau, Weitzaan & Messenger, 1981) and more socially withdrawn and irritable than other children (Lavigne & Ryan, 1979).

Positive effects have also been found. The life of adolescent siblings were not impaired by the presence of mentally retarded brothers or sisters (Caldwell & Guze, 1960; Gralickers, Fishler & Koch, 1962). No higher rates of behavioral disturbance were observed in siblings of handicapped children (Gath, 1972; Lavigne & Ryan, 1979; Breslau et al., 1981).

Schwirian (1976) concluded that the presence of a handicapped child did not affect siblings in the assumption of responsibility, independence and social activity. Moreover, the self-concept of siblings of handicapped children was found to be higher than that of the normative group (Cayton, Friedman, Tavormina & Tucker, 1977).

Between the two sets of bipolar results are a few studies with both an adverse and beneficial outcome. Grossman (1972) reported an equal number of college siblings to have benefitted as to have been harmed by the presence of a handicapped brother or sister. Cleveland and Miller (1977) reported the majority of adult older siblings to have positively adapted, in their childhood, to their retarded siblings, although some were definitely affected in their life commitment.

A linear and pathological model of adaptation of siblings of handicapped children has thus produced inconclusive results regarding the impact of a handicapped child on his siblings. Conflicting results further suggest that adaptation to a handicapped brother or sister need not be a pathological process. There are obviously means of coping with the presence of a handicapped child. The crucial question becomes, then, "What makes the difference between whether a relationship with a child with special needs enhances or diminishes a sibling's life" (Siemon, 1984, p.297). Further research is required to examine factors that would promote or impede the adjustment

to a handicapped brother or sister.

In need of study is the self-concept of siblings of handicapped children. The self-concept refers to the "evaluated beliefs a person holds about himself" (Burns, 1979, p.3). Self-concept possesses central organization and regulatory functions of personality (Norem-Hebeisen, 1982) and of behavior (Lynch, 1982). The evaluative self-attitude which Coopersmith (1960) termed, "the self-esteem", is thought to be a motivational force with behavioral consequences (Coopersmith, 1969; Rogers, cited from Burns, 1979). Self-concept is relatively stable through time and place and produces relatively consistent behavior patterns (Burns, 1979).

The self-concept of siblings of handicapped children has drawn only scant research attention, despite the significant and relatively permanent nature of self-concept. Yet, there are reports that a handicapped child induced shame in his siblings (Schonell & Watts, 1959) and a poor self-concept in a sister who became retarded (Kaplan, 1969). Moreover, while Gayton et al. (1979) found a higher self-concept than the norm in siblings of handicapped children, Harvey and Greenway (1984) reported just the opposite. These studies urge further investigation of the self-concept of siblings of handicapped children. Studies of self-concept and emotional adjustment of the siblings further indicate the likelihood for negative effects of a handicapped child on the self-concept of his

siblings which, however, can be moderated by some adaptive mechanism. Identifying the mechanism would be paramount for families of handicapped children.

The development of self-concept has been linked to familial and psychological factors. Some contributing familial variables are family characteristics such as the family size (Wylie, 1976) and psychological factors include parental attitudes and behavior. Children of high self-esteem had mothers with high emotional stability and positive child rearing attitudes (Coopersmith, 1969).

Whereas no study has researched mediators of the self-concept of siblings of handicapped children, some mediating factors of emotional and behavioral adjustment have been identified. Among the factors are familial characteristics such as the sex of the siblings (Breslau, 1982; Farber, 1959; Gath, 1973; Grossman, 1972; Lavigne & Ryan, 1979), sex of the handicapped child (Grossman, 1972), birth order (Breslau, 1982; Breslau et al., 1981; Farber, 1959; Gath, 1973; Grossman, 1972), family size (Gath, 1973; Grossman, 1972), family's socio-economic status (Gath, 1973; Grossman, 1972) and family's religion (Farber, 1959).

Fewer studies have investigated psychological mediators of adjustment to a handicapped brother or sister. The few studies that did consistently identified parental attitudes to be a critical variable. Parental attitudes affected teenage siblings'

attitudes toward the placement of their retarded brother or sister (Caldwell & Guze, 1960; Graliker et al., 1962). The school adjustment of siblings of children with spina bifida was related to the mothers' level of anxiety (Tew & Laurence, 1973). Parental perception and acceptance of handicapped children were key to siblings' adjustment in higher socio-economic homes (Grossman, 1972). As self-concept and behavior are interrelated, mediators of behavioral adjustment of siblings of handicapped children should also affect their self-concept.

Another psychological factor that may influence the self-concept of siblings of handicapped children is social support. Social support refers to emotional and instrumental support provided to a family by the family's social network (Unger & Powell, 1980). Social support has been shown to be a mediator of life stress in general (Cobb, 1976). Social support moderated stress in transition to new parenthood (McGuire & Gottlieb, 1979) and in mothers of pre-term and full-term infants (Crnic, Greenberg, Ragozin, Robinson & Basham, 1983). Maternal social support further affected infant -mother interaction (Crnic et al., 1983; Crokenberg, 1981). Support from mothers' own parents strengthened marital integration of parents of retarded children (Farber, 1959) and support from all sources facilitated parent's adjustment and the handicapped child's progress (Dunst, Trivette & Cross, 1984). Cochran and Brassard (1979) proposed that social support mediates parenting and will directly or indirectly affect a child's

development. Social support would likely influence a sibling's self-concept in the presence of a handicapped brother or sister.

Theoretical reasoning and research evidence suggest that similar variables affecting the development of self-concept in general and the emotional and behavioral adjustment of siblings of handicapped children in particular would also influence the self-concept of those siblings. These variables include family characteristics such as the sex of the sibling and of the handicapped child, birth order, family size, family's socio-economic status and religion and psychological factors such as parental attitudes and emotional responses to the child's handicapping condition and the family's social support.

Psychological variables may have differential effects on different dimensions of self-concept. This is because that the self-concept is not a single entity but a multi-dimensional attribute composed of a set of attitudes toward various experiences. William James (cited from Burns, 1979) hypothesized that there are four components of the self-the spiritual self, social self, material self and the physical self. Coopersmith (1969) suggests that the self-esteem may vary across different areas of experience. A person may "regard himself as very worthy as a student, moderately worthy as a tennis player and totally unworthy as a musician" (p.6).

As an exploratory study, the present study compared the self-concept of siblings of handicapped children to the normative data and identified factors that may mediate the self-concept of

those siblings. The study asked four questions: (1) Is the self-concept of siblings of handicapped children lower than the norm? (2) Would the self-concept of those siblings be affected by some familial chacteristics? (3) Is the self-concept affected by parental attitudes and stress related to the handicapped child? (4) Is the self-concept influenced by the family's social support? It was hypothesized that the self-concept of siblings of handicapped children will not be lower than the norm. It was also hypothesized that the self-concept in those siblings will be mediated by some familial and psychological variables. The psychological variables will be parental attitudes and stress and the family's social support. However, it was presumed that psychological variables will have differential effects on different aspects of the self-concept.

METHOD

Subjects

The subjects were 34 sibling and parent pairs of handicapped children, 23 from a large North-West American city and 11 from a medium-size Canadian city. All handicapped children had attended or were attending at the time of study a special education program. The primary handicaps included 18 with mental retardation, 11 with physical and sensory handicaps, 3 with autism and 2 with severe speech disorder. There are 20 male and 14 female handicapped children, aged 2 to 15 years, with a mean age of 7.8 years.

Only one sibling from each family participated, except

for one where two siblings both met the selection criterion of being closest in age to the handicapped child. There was an equal number of male and female siblings, aged 7 to 14, with a mean age of 10.2 years. Twenty-six siblings were older and 8 younger than the handicapped child. All families came from the lower-middle to the upper-middle class. However, one father was unemployed and another did not report his occupation status. The majority of the families (16) were Protestant, 7 Catholic and others, either of a combination of Protestant and Catholic or other religious affliations. Demographic characteristics of the families are summarized in Table 1.

Procedure

The families were invited to participate in the study through their respective special education programs. Following their consent to participate, parents received a package of questionnaires. Another questionnaire was administered to the siblings either at home or in a workshop for siblings of handicapped children.

Instrumentation

The parents completed a demographic form and two questionnaires. The demographic form requested the handicapped child's age, sex and handicap. It also asked for the parents' occupation, education, religion and the family size.

One questionnaire for parents was the QRS-F (Friedrich,

Table 1

Demographic Characteristics of Families

Region	Type	N
	Canada	11
	U. S.	23
	Total	34
Siblings	Sex	N
	Male	17
	Female	17
	Total	34
	Ages	
	Range	7 - 14 years
	X	10.2 years
	Birth Order	N
	Older than Handicapped child	26
	Younger than handicapped child	8
	Total	34
Handicapped Children	Sex	N
	Male	20
	Female	14
	Total	34
	Ages	
	Range	2 - 15 years
	X	7.8 years
	Handicaps	N
	Mental retardation	18
	Physical & sensory handicaps	11
	Autism	3
	Severe speech disorders	2
	Total	34
Family's SES	SES	N
	Unemployed	1
	Lower-middle	13
	Middle-middle	14
	Upper-middle	5
	Unknown	1
	Total	34
Family's religion	Religion	N
	Protestant	16
	Catholic & Protestant	3
	Catholic	7
	None & others	8
	Total	34

Greenberg & Crnic, 1983), derived from the Questionnaire on Resources and Stress (Holroyd, 1974). This questionnaire measures a family's perception and emotional responses to the impact of an ill or handicapped family member on the family. The scale was reduced from 289 items to 52 items for the short form, QRS-F. The correlation between the original scale and the QRS-F is .977 (Friedrich et al., 1983). Factor analysis of the QRS-F resulted in four distinct factors: (1) Parent and Family Problems, (2) Pessimism, (3) Child Characteristics, and (4) Physical Incapacitation. The QRS-F items require true-false answers.

The parents also completed the Family Support Scale (FSS) (Dunst & Jenkins, 1983). The FSS consists of 18 items measuring the number of potential sources of family social support and the degree to which they have been helpful to families raising a young child. Rating proceeds on a 5-point scale, ranging from "Not At All Helpful" (0) to "Extremely Helpful" (5). The FSS has an internal consistency of .77, a split half reliability of .75 and a test-retest reliability of .91 (Dunst & Jenkins, 1983).

The siblings completed the Piers-Harris Children's Self-concept Scale, the Way I Feel About Myself (Piers & Harris, 1969). The scale, with 80 yes-no items, was standardized on children, grade 3 to 12. The internal consistency ranges from .78 to .93 and the test-retest reliability, from .71 to .77

(Piers & Harris, 1969). Factor analysis produced 6 factors: (1) Behavior, (2) Intellectual and School Status, (3) Physical Appearance and Attributes, (4) Anxiety, (5) Popularity and (6) Happiness and Satisfaction.

RESULTS

A total of 41 families were contacted with 34 (83%) completing the study. The questionnaires were addressed to both parents, but all consent forms were signed by the mothers. It appeared that mothers filled out the questionnaires although the fathers' participation cannot be ruled out.

Siblings' Self-concept Scores and Normative Data

Data were analyzed with the SPSS-X computer program (SPSS Inc., 1986). Table 2 presents mean self-concept scores for various groups. As seen, the mean total self-concept score

Table 2

Mean Self-concept Scores

Group	$\bar{X}$	
U. S. (N=23)	60.6	
Canada (N=11)	67.2	(p=.10)
Total (N=34)	62.7 (SD=11.3)	
Normative	47.8 - 60.4	

for the American sample was 60.6 and the Canadian sample, 67.2. The difference, however, was short of a statistical significance (p=.10). This fact eliminated the source of bias due to different

geographical regions and allowed treatment of the groups as homogeneous.

The mean total self-concept score for the entire group of siblings of handicapped children was 62.7 (SD=11.3). This score was above any of the normative data which range from 47.8 to 60.4 (Piers & Harris, 1969). As a group, the siblings of handicapped children showed the same, perhaps a higher, level of self-concept as children in general.

Familial Characteristics and Siblings' Self-concept

A series of analysis of variance was performed on the familial characteristics: sex of the handicapped child and of the sibling, type of handicap, family's socio-economic status, family's religion and birth order of the sibling in relation to the handicapped child. Only the sex of the handicapped child resulted in significant differences in the self-concept scores of their siblings ($F=5.14$, $p<.03$). Table 3 shows mean self-concept scores as a function of sex. As shown, male

Table 3

Mean Self-concept Scores As A Function Of Sex of Handicapped Child

Sex of Handicapped Child	X Self-concept Score	F
Male	59.3	
Female	67.7	5.14*

* $p<.03$

handicapped children were related to lower self-concept scores in the siblings than female handicapped children. The mean total self-concept score for siblings of handicapped boys was 59.3 and for siblings of handicapped girls, 67.7. Handicapped boys affected their brothers and sisters equally in the self-concept ($t=.34$, $p>.74$). The Pearson correlation produced a significant correlation of .37 ($p<.01$) between self-concept scores and the handicapped child's sex.

Multiple regression was performed using the step-wise selection entering, in order, sex of the handicapped child, sex of the sibling, birth order, total QRS-F scores and total family social support scores. This resulted in the sex of the handicapped child as the single predictor (multiple $R=.37$, $R^2=.14$).

Parents' Perception and Stress and Siblings' Self-concept

Table 4 presents some correlations between the self-concept and QRS-F scores. A negative but statistically insignificant relationship is observed between the total self-concept and the total QRS-F scores. A trend, however, appears for Factor 6 (Self-concept), Happiness and Satisfaction, to be negatively related to the parents' total QRS-F scores ($r=-.28$, $p=.06$). This trend becomes significant when Factor 6 (Self-concept) correlates significantly in a negative direction with Factor 1 (QRS-F), Parent and Family Problems ($r=.36$, $p<.02$). Factor 6 (Self-concept) again shows a trend to be related to Factor 2

Table 4

Some Correlations Between Self-concept And The QRS-F

Self-concept	QRS-F		
	Total	Factors 1 (Parent & Family Problem Problems)	Factor 2 (Pessimism)
Total	-.10 p=.28		
Factor 1 (Behavior)	-.15 p=.19	-.25 p=.08	-.11 p=.27
Factor 6 (Happiness & Satisfaction)	-.28 p=.06	-.36 p=.02	-.23 p=.09

(QRS-F), Pessimism (r=-.23, p=.09). Table 4 further shows a a negative relationship between Factor 1 (Self-concept), Behavior, and Factor 1 (QRS-F), Parent and Family Problems (r=-.25, p=.08).

Family Social Support and Siblings' Self-concept

Table 5 presents some correlations between the self-concept and Family Social Support scores. No significant relationship appears between the total self-concept and total family's social support scores. Analyses of factors of both variables, however, produced several trends, some significant. A significant negative relationship is found between the total family social support score and Factor 3 (Self-concept), Physical Appearance and Attributes (r=-.30, p<.05). A similar trend appears between the total social support scores and Factor 2 (Self-concept), Intellectual and School Status (r=-.26, p=.07). Factor 2 and 3 (Self-concept) again show a trend to correlate with Factor 1

Table 5

Some Correlations Between
Self-concept and Family Social Support

Self-concept	Family Social Support	
	Total	Factor 1 (Parents & Relatives)
Total	-.09 p=.32	-.02 p=.46
Factor 2 (Intellectual & School status)	-.26 p=.07	-.26 p=.07
Factor 3 (Physical Appearance & Attributes)	-.30 p=.05	-.27 p=.06
Factor 4	- -	.28 p=.05

(Social Support), Parents and Relatives (For Factor 2, r=-.26, p= .07 and for Factor 3, r=-.27, p=.06).

However, a significantly positive relationship was present between Factor 4 of the self-concept scale, Anxiety,and Factor 1 (Social Support), Parents and Relatives.(r=.28, p<.05). The more support given by parents' own parents and relatives, the less anxiety a sibling perceived himself to have.

DISCUSSION

The results confirm the hypothesis that the presence of a handicapped child does not necessarily diminish the self-concept of his siblings. The siblings under study maintained as much positive self-concept as other children in general. This finding is in line with the observation of Gayton et al. (1979) of a higher self-concept than normal among the siblings of handicapped children.

The hypothesis that some familial characteristics would affect the self-concept of siblings of handicapped children was partially confirmed. Only the sex of the handicapped child contributed to his siblings' self-concept. This factor accounted for 14% of the variance of his siblings' self-concept - a figure not to be ignored. A handicapped brother had more negative impact on his siblings than a handicapped sister. Both male and female siblings with a handicapped brother displayed a lower self-concept than those with a handicapped sister.

The sex of a child has been found in other studies to affect the independent behavior of siblings. Cicirelli (1976) observed younger children with siblings of the opposite sex to be more independent than children with the same-sex siblings. The sex of a child has also influenced a sibling's social behavior. In the same-sex pairs, sisters showed more prosocial behavior than brothers and in the mixed-sex pairs, younger siblings responded more positively to social initiations than did their older siblings (Abramovitch, Corter & Lando, 1979; Abramovitch, Corter & Peplar, 1980; Dunn & Kenrich, 1980). The gender of a child will also affect a sibling's self-concept, especially when the child is handicapped as demonstrated by this study.

The question, however, arises as to why a handicapped brother should impede the self-concept of his siblings. Farber (1959) found that a handicapped son lowered marital integration

in parents of lower socio-economic families. He attributed this phenomenon to higher parental expectations of the life-career of boys in those homes. The same expectations. however, should not be held by the siblings. It is, nonetheless, possible that parental attitudes had been transmitted to the siblings to affect their self-concept. This was somewhat substantiated by the trend for a consistency between parents' QRS-F scores and the siblings' self-concept in relation to the sex of the handicapped child. Like the siblings, parents of handicapped boys tended to experience a higher level of stress (QRS-F $\bar{X}$=20.8) than parents with handicapped daughters (QRS-F $\bar{X}$=15.6), although the difference is short of a statistical significance (p=.095). Tinted by parental attitudes, the siblings showed a lower self-concept in response to the presence of a handicapped brother.

The relationship between parental attitudes and responses and the siblings' self-concept, however, appears to be specific. There was only a weak indication for the general parental perception and stress due to the handicapped child to relate negatively to a sibling's total self-concept. However, parental attitudes and responses toward some specific areas of the handicapping condition did influence certain aspects of the siblings' self-concept. Parental attitudes and stress pertaining to parent and family problems in caring for the handicapped child, and to a lesser degree, parental pessimism, had a negative impact on the siblings' perception of their

own happiness and satisfaction. Where parental stress was intense and perception of the handicapped child pessimistic, the siblings also perceived themselves to be less happy and and satisfied. A trend was also indicated that parental and family problems due to the care of a handicapped child would negatively affect a sibling's perception of his own behavioral adjustment.

The specific relationship between parents' perception and stress and the siblings' self-concept came as no surprise. Parental and family problems concern all members of the family and therefore may influence a sibling's self-concept. However, the effects should be limited to only the aspects regarding personal happiness and satisfaction, behavior adjustment and anxiety. Parental perception and responses to other areas of the handicapped child such as his characteristics and incapacitation, other factors measured in the QRS-F, would have a less direct impact on a sibling. Likewise, parental perception and stress due to a handicapped child would not directly influence a sibling's perception of his intellectual and school status, physical appearance and popularity which are also factors in the Piers-Harris Children's Self-concept Scale. The results confirm the á priori hypothesis that the effect of parental perception and resonses to the handicapped child on the siblings' self-concept would be specific. However, as a relationship did not appear between parental and family

problems and siblings' self-concept concerning anxiety, more investigation is required for clarification of the relationship between parental attitudes and stress and the siblings' self-concept.

Like parental perception, family's support mediates the siblings' self-concept only in a specific manner. Total family social support did not change the siblings' total self-concept. However, total family social support influenced a sibling's perception of his physical appearance and intellectual and school status. When parents were given more support, the siblings tended to feel less attractive physically and less competent intellectually. A tendency further suggests that affecting these areas of self-concept was the support provided by the parents' own parents and other relatives.

Support delivered by grandparents and other relatives, however, had a positive impact on the siblings' perception of their own anxiety. Increased support from those resources tended to attenuate anxiety in the siblings.

Support from parents' own parents and relatives may affect a sibling's self-concept only indirectly through mediating parental stress. Support for parents would reduce their stress in caring for the handicapped child. This possiblity was indicated by a negative though short of a statistically significant relationship between parental QRS-F and family support ($r=-.20$, $p=.14$). A less stressed parent would be more

emotionally available to the siblings causing them to experience less anxiety. This remains probable despite a lack of a significant relationship observed ealier between the QRS-F and the anxiety factor of the self-concept scale.

That different areas of self-concept in siblings of handicapped children were related to different aspects of parental attitudes and family social support is congruent with theoretical assumptions by Rogers (cited from Burns, 1979) and Coopersmith (1969) for a multi-dimensional nature of self-concept. Different aspects of self-concept may well be differentially affected by various psychological factors.

Conclusions

This study compared the self-concept of siblings of handicapped children with norms and examined factors contributing to the self-concept. The results show that a handicapped child did not diminish his siblings' self-concept. Siblings of handicapped children are more like than unlike other children in the quality of self-concept. A pathological model of adaptation therefore need not apply to the siblings of handicapped children.

The best predictor of all familial factors for the self-concept of siblings of handicapped children is the sex of the handicapped child. A handicapped brother would impede the self-concept of silbings more than a handicapped sister would. He would also exert an equal impact on his brothers and

sisters. Complex relationships appear to exist between a sibling's self-concept and such psychological variables as parental perception and responses to the handicapped child and the family's social support. The effects of these factors were specific. Parental attitudes and stress due to parent and family problems concerning the care of the handicapped child and, perhaps parental pessimism too, would affect a sibling's perception of his own happiness and satisfaction and behavior adjustment. Support from parents' own parents and relatives would tend to lessen anxiety in the siblings. Excessive support from grandparents and other relatives, on the contrary, can lead to a feeling of incompetence and subsequently, a lower self-concept pertaining to personal physical appearance and intellectual and school status.

While consistent with theoretical reasoning and some previous studies, this study also presents some unique findings. Moreover, the small sample size necessarily weakens the strength of the study and may be responsible for the small magnitudes observed of the relationships between variables. These limitations necessitate that the results be viewed as trends. Further research is called for to expand the study and more pertinently, to verify those familial and psychological factors identified to be mediators of the self-concept of siblings of handicapped children. Research would also benefit from the inclusion of a control group to assess whether

different factors underlie the development of self-concept of children with handicapped siblings and children with no handicapped siblings.

Future research also needs to consider the complex and specific relationships between a sibling's self-concept and mediating psychological variables. As the present study suggests, self-concept represents self-perceptions of different experiences and hence may be affected by different types of social support and various sources of parental attitudes and stress. Future research should examine various aspects of self-concept in relation to different dimensions of psychological variables, rather than treating self-concept, social support and parental attitudes and stress each as a single entity.

The weaknesses of this study must limit the generalizability of some of the results. Nonetheless, the results urge that special attention be paid to siblings of handicapped boys in a practical setting. The study further suggests that, as some aspects of the self-concept of siblings of handicapped children would be influenced by parental attitudes and stress concerning the handicapped child, professional intervention for siblings, where required, would have to mediate through parents' own adjustment. Finally, a potential resource for assisting siblings of handicapped children is support from their grandparents and other relatives. However, appropriate utilization of this resource would be required as excessive

support from those sources may hamper the siblings' self-confidence in their physical and intellectual development.

In conclusion, a linear and pathological model is inadequate to chart the course of adaptation to a handicapped brother or sister. As an example, the self-concept of their siblings would be mediated by some familial factors and most likely by certain psychological variables. Specifying those mediators would be cruicial to families of handicapped children.

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